

Claims

1. A process for coating a metal substrate with a layer of ceramic suitable as a support for a Fischer-Tropsch catalyst, the method comprising forming a slurry containing dispersible alumina and particulate alumina, the particulate alumina having a particle size greater than 1  $\mu\text{m}$ , and the proportion of dispersible alumina being between 5% and 35% by weight of the total alumina, and spraying droplets of the slurry onto a hot metal substrate, the substrate being at a temperature between 500° and 750°C.
2. A process as claimed in claim 1 wherein the droplets comprise at least 15% solid material.
3. A process as claimed in claim 1 or claim 2 wherein the metal substrate comprises an aluminium-bearing ferritic steel.
4. A process as claimed in any one of the preceding claims wherein the ceramic layer also incorporates a stabiliser.
5. A process as claimed in any one of the preceding claims wherein the coated substrate is subsequently calcined.
6. A process as claimed in any one of the preceding claims wherein the layer is built up by successively spraying droplets of slurries of different compositions.
7. A process as claimed in claim 6 wherein the compositions are such that the layer increases in porosity towards its exposed surface.

8. A process of making a catalyst, comprising coating a metal substrate with a layer of porous ceramic by a process as claimed in any one of the preceding claims, and incorporating catalyst material into the ceramic layer.

9. A process as claimed in claim 8 wherein the catalyst material is a catalytic metal, and the catalytic metal is incorporated by contacting the ceramic layer with a solution of a salt of the metal in a solvent comprising an organic liquid whose surface tension and viscosity are lower than those of water.

10. A process as claimed in claim 8 or claim 9 wherein the ceramic layer incorporates a catalytic metal, and is then coated with wax to protect it from the atmosphere.

11. A catalyst made by a process as claimed in any one of claims 8 to 10.